IN THE CLAIMS:

1 - 19. (canceled)

20. (currently amended) A manufacturing method of a silicon wafer not including COP comprising:

preparing a silicon single crystal by the Czochralski method,

slicing a first silicon wafer from said silicon single crystal to obtain a silicon wafer including COP,

heat-treating said silicon wafer including COP ~~in which a silicon wafer that has been sliced from a silicon single crystal is heat-treated~~ in an oxidizing atmosphere to obtain the silicon wafer not including COP, wherein

assuming that a temperature at which said heat treatment is carried out in said oxidizing atmosphere is denoted as T(°C) and an interstitial oxygen concentration in said silicon wafer including COP is denoted as [Oi] (atoms/cm^3), said manufacturing method of the silicon wafer characterized in that a relation between said temperature T and said interstitial oxygen concentration [Oi] satisfies the following formula:

$$[Oi] \leq 2.123 \times 10^{21} \exp(-1.035/k(T+273)),$$

where, said interstitial oxygen concentration in said silicon wafer including COP is a value measured in accordance with FT-IR method

(ASTM F-121, 1979) and the k is the Boltzmann's constant, 8.617×10^{-5}(eV/K).

21. (currently amended) A manufacturing method of a silicon wafer in accordance with claim 20, in which [[a]] said silicon single crystal is a silicon single crystal doped with phosphorus by [[a]] neutron irradiation ~~is used as said silicon single crystal~~.

22. (currently amended) A manufacturing method of a silicon wafer in accordance with claim 20, in which [[a]] said silicon single crystal is a silicon single crystal doped with nitrogen by a concentration of 2×10^{13} atoms/cm^3 or more and/or a single crystal doped with carbon by a concentration of 5×10^{16} atoms/cm^3 or more ~~is used as said silicon single crystal~~.

23. (canceled)

24. (currently amended) A manufacturing method of a silicon wafer in accordance with claim 20, in which the silicon wafer not including COP is mirror-polished after said heat treatment in said oxidizing atmosphere.

25. (currently amended) A manufacturing method of a silicon wafer in accordance with claim 21, in which the silicon wafer not including COP is mirror-polished after said heat treatment in said oxidizing atmosphere.

26. (currently amended) A manufacturing method of a silicon wafer in accordance with claim 22, in which the silicon wafer not including COP is mirror-polished after said heat treatment in said oxidizing atmosphere.

27. (canceled)

28. (currently amended) A manufacturing method of a SOI wafer, in which a SOI wafer is manufactured by using said silicon wafer not including COP manufactured by said method as defined in claim 24 for an active layer side wafer.

29. (currently amended) A manufacturing method of a SOI wafer, in which a SOI wafer is manufactured by using said silicon wafer not including COP manufactured by said method as defined in claim 25 for an active layer side wafer.

30. (currently amended) A manufacturing method of a SOI wafer, in which a SOI wafer is manufactured by using said silicon wafer not including COP manufactured by said method as defined in claim 26 for an active layer side wafer.

31. (canceled)

32. (currently amended) A manufacturing method of a SOI wafer, in which a buried oxide film is formed by applying a heat treatment to an active layer side silicon wafer including COP in an oxidizing atmosphere to obtain an active layer side silicon wafer not including COP, and said active layer side silicon wafer not including COP is then bonded to a supporting side wafer with said buried oxide layer interposed therebetween thus to manufacture a bonded SOI wafer, wherein

assuming that a temperature at which said heat treatment is applied to said active layer side silicon wafer including COP in said oxidizing atmosphere is denoted as T(°C) and an interstitial oxygen concentration of said active layer side silicon wafer including COP is denoted as [Oi] (atoms/cm^3), said manufacturing method of the SOI wafer characterized in that a relation between said heat treatment temperature T and said interstitial oxygen

concentration [Oi] of said active layer side silicon wafer including COP satisfies the following formula:

$$[Oi] \leq 2.123 \times 10^{21} \exp(-1.035/k(T+273)),$$

where, said interstitial oxygen concentration is a value measured in accordance with FT-IR method (ASTM F-121, 1979) and the k is the Boltzmann's constant, 8.617×10^{-5}(eV/K).

33. (currently amended) A manufacturing method of a SOI wafer in accordance with claim 32, in which said active layer side silicon wafer including COP is fabricated by using a silicon single crystal doped with phosphorus by neutron irradiation.

34. (currently amended) A manufacturing method of a SOI wafer in accordance with claim 32, in which said active layer side silicon wafer including COP is fabricated by using a silicon single crystal doped with nitrogen by a concentration of 2×10^{13} atoms/cm^3 of more and/or by using a silicon single crystal doped with carbon by a concentration of 5×10^{16} atoms/cm^3 or more.

35. (canceled)

36. (currently amended) A manufacturing method of a SOI wafer, in which an active layer side silicon wafer including COP is bonded to a supporting side wafer with an insulating film interposed therebetween and then a heat treatment for enhancing a bonding strength is applied to thus bonded wafer in an oxidizing atmosphere to thereby manufacture a bonded SOI wafer, wherein

assuming that a temperature at which said heat treatment for enhancing the bonding strength is carried out in said oxidizing atmosphere is denoted as T(°C) and an interstitial oxygen concentration of said active layer side silicon wafer including COP is denoted as [Oi] (atoms/cm^3), said manufacturing method of the SOI wafer characterized in that a relation between said temperature T and said interstitial oxygen concentration [Oi] satisfies the following formula:

$$[Oi] \leq 2.123 \times 10^{21} \exp(-1.035/k(T+273)),$$

where, said interstitial oxygen concentration of said active layer side silicon wafer including COP is a value measured in accordance with FT-IR method (ASTM F-121, 1979) and the k is the Boltzmann's constant, 8.617×10^{-5} (eV/K).

37. (previously presented) A manufacturing method of a SOI wafer in accordance with claim 36, in which said active layer side

silicon wafer including COP is fabricated by using a silicon single crystal doped with phosphorus by neutron irradiation.

38. (currently amended) A manufacturing method of a SOI wafer in accordance with claim 36, in which said active layer side silicon wafer including COP is fabricated by using a silicon single crystal doped with nitrogen by a concentration of 2×10^{13} atoms/cm^3 or more and/or by using a silicon single crystal doped with carbon by a concentration of 5×10^{16} atoms/cm^3 or more.

39. (canceled)

40. (currently amended) A manufacturing method of a SOI wafer, comprising the steps of:

fabricating an active layer side silicon wafer not including COP by firstly applying an oxidizing heat treatment to a silicon wafer including COP, which satisfies the following formula representing a relation between a heat treatment temperature T and an interstitial oxygen concentration [Oi] of the silicon wafer including COP:

$$[Oi] \leq 2.123\times10^{21}\exp(-1.035/k(T+273)),$$

where, T(°C) is the temperature at which said heat treatment is carried out in an oxidizing atmosphere, and [Oi] (atoms/cm^3) is the interstitial oxygen concentration in the silicon wafer including COP, wherein said interstitial oxygen concentration of the silicon wafer including COP is a value measured in accordance with FT-IR method (ASTM F-121, 1979) and the k is the Boltzmann's constant, 8.617×10^{-5} (eV/K), and by secondly removing an oxide film and applying a mirror-polishing;

forming an ion implanted layer in said active layer side silicon wafer not including COP by forming an oxide film on said active layer side silicon wafer, and ion-implanting via said oxide film;

subsequently, forming a bonded wafer by bonding ~~said~~ the active layer side silicon wafer having the ion implanted layer to a supporting side wafer with said oxide film interposed therebetween; and

then, separating a part of said active layer side silicon wafer from a boundary defined by said ion implanted layer by holding said bonded wafer at a predetermined temperature to thereby apply a heat treatment thereto.

41. (previously presented) A manufacturing method of a SOI wafer in accordance with claim 40, in which a surface of the separated active layer side wafer is mirror-polished so that it can be used repeatedly as a substrate for forming a new active layer of the SOI wafer.

42. (currently amended) A manufacturing method of a SOI wafer in accordance with claim 40, in which said active layer side silicon wafer including COP is fabricated by using a silicon single crystal doped with phosphorus by neutron irradiation.

43. (currently amended) A manufacturing method of a SOI wafer in accordance with claim 41, in which said active layer side silicon wafer including COP is fabricated by using a silicon single crystal doped with phosphorus by neutron irradiation.

44. (currently amended) A manufacturing method of a SOI wafer in accordance with claim 40, in which said active layer side silicon wafer including COP is fabricated by using a silicon single crystal doped with nitrogen by a concentration of 2×10^{13} atoms/cm^3 or more and/or by using a silicon single crystal doped with carbon by a concentration of 5×10^{15} atoms/cm^3 or more.

45. (currently amended) A manufacturing method of a SOI wafer in accordance with claim 41, in which said active layer side silicon wafer <u>including COP</u> is fabricated by using a silicon single crystal doped with nitrogen by a concentration of 2×10^{13} atoms/cm^3 or more and/or by using a silicon single crystal doped with carbon by a concentration of 5×10^{16} atoms/cm^3 or more.

46 - 47. (canceled)